

**ABSTRACT OF THE DISCLOSURE****METHOD AND APPARATUS FOR AUTONOMIC DETECTION OF CACHE  
"CHASE TAIL" CONDITIONS AND STORAGE OF INSTRUCTIONS/DATA  
IN "CHASE TAIL" DATA STRUCTURE**

A method, apparatus, and computer instructions in a data processing system for processing instructions are provided. Instructions are received at a processor in the data processing system. If a selected indicator is associated with the instruction, counting of each event associated with the execution of the instruction is enabled. The performance indicators and counter values may be used as a mechanism for identifying cache hits and cache misses. Performance counters are incremented each time the instructions of routines of interest are executed and each time the instructions must be reloaded into the cache. From the values of these counters the cache hit-miss ratio may be determined. When the cache hit-miss ratio becomes less than a predetermined threshold, i.e. there is a greater number of cache misses than cache hits, the present invention may determine that a problem condition has occurred and initiate "chase tail" operations for avoiding overwriting of entries in the cache.